DRAFT

NWA 2626

Olivine-orthopyroxene-phyric Shergottite
31.1 grams

Figure 1: NWA 2626. Nice photo by Michael Farmer. About 1 cm.

Introduction

NWA 2626 was purchased in Morocco in 2004 by Mike Farmer and Jim Strope. It is a small shocked fragment of olivine-orthopyroxene shergottite (figure 1). According to Irving et al. (2005) it is not paired with other Martian meteorites found in North Africa. It has a thin (mm) weathering rind, but the interior is said to be unaltered.

Petrography

NWA2626 is a very phenocryst-rich rock with a basaltic-textured mesostasis made up of intergrown pyroxene and shocked plagioclase (maskelynite). Large olivine phenocrysts are zoned. Elongate prismatic phenocrysts of orthopyroxene are aligned, as in a flow pattern (Irving et al. 2005).

According to Irving et al. (2005), NWA2626 has cross-cutting, black-glass, veinlets and glass pockets from shock. The plagioclase has been converted to maskelynite by shock.

Mineralogical Mode for NWA2626

Olivine
Pyroxene
Maskelynite
Ilmenite
Chromite
Phosphate
Pyrrhotite

Mineral Chemistry

Olivine: Large olivine phenocrysts in NWA2626 are zoned $Fo_{83\text{-}57}$.

Pyroxenes: Phenocrysts of orthopyroxene ($Wo_{2.4}En_{79.7}Fs_{17.9}$) are surrounded by pigeonite ($Wo_{4.4}En_{70.2}Fs_{25.4}$), with interstitial pigeonite (about $Wo_{12.7}En_{50}Fs_{37}$) and minor augite ($Wo_{31}En_{45}Fs_{24}$).

Plagioclase or Maskelynite: Plagioclase analyses were $An_{71\text{-}66,}$ before being shocked to maskelynite (Irving et al. 2005).

Glass: The glass veinlets and shock melt pockets appear similar to that in ALH79001.

Chromite: Irving et al. (2005) give the composition of chromite and ulvospinel.

Sulfide: Pyrrhotite.

Phosphate: Merrillite

Whole-rock Composition
none

Radiogenic Isotopes
none

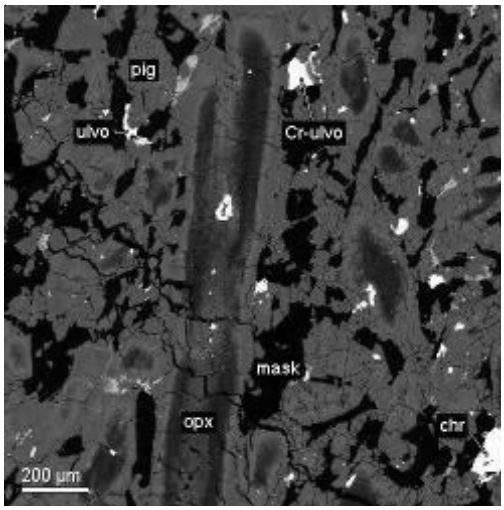

Figure 2: Back-scatter-electron image of polished thin section of NWA2626, showing elongate orthopyroxene (blue) mantled by pigeonie (green). Figure by Anthony Irving and Scott Kuehner.